

ABSTRACTVIA PLACEMENT FOR LAYER TRANSITIONS IN FLEXIBLE CIRCUITS WITH  
HIGH DENSITY BALL GRID ARRAYS

5

A flexible circuit having vias disposed to minimize discontinuity in a ground plane separating opposing transmission lines. The flex circuit comprises a first transmission line coupled to a first surface, a second transmission line coupled to a second opposing surface and a ground plane separating the first transmission line and the second transmission line. The flexible circuit also includes a first type of electrical connection pads disposed on the first surface, and electrically coupled to the first transmission line. The flexible circuit also includes a second type of electrical connection pads disposed on the second surface, and electrically coupled to the second transmission line wherein the second type of electrical connection pads have a higher areal density than the first type of electrical connection pads. The flexible circuit also includes vias disposed proximate the first type of electrical connection pads and extended through the ground plane to provide for electrically coupling the first transmission line and the second transmission line, such that the vias reduce discontinuity in the ground plane and aggregate discontinuity in the flex circuit.

20